

REMARKS

Claims 1-16 are pending in the application. Claims 1-8 and 12-16 are under consideration. Claims 9-11 are withdrawn as the restriction requirement has been made final. Claims 1-8 and 12-16 are rejected under 35 U.S.C. 112, second paragraph, as allegedly failing to particularly point out and distinctly claim the subject matter which applicants regard as the invention. Claims 1-8 and 12-16 are also rejected under 35 U.S.C. 102(b) as defining subject matter which is allegedly anticipated by the teachings in Ichiroku et al. (US Patent Publication No. 2002/0022681 A1) ("Ichiroku"). Claims 1-8, 12-16 are rejected under 35 U.S.C. 102(b) as defining subject matter which is allegedly anticipated by the teachings in Wada et al. (US Patent No. 5,145,889) ("Wada"). Claims 1-8, 12-16 are rejected under 35 U.S.C. 102(e) as defining subject matter which is allegedly anticipated by the teachings of two published applications by Sumita et al., viz. US Patent Publication No. 2002/0077421 (i.e., '421), and US Patent Publication No. 2002/0089071 (i.e., '071). Claims 1-7 and 12-15 are rejected under 35 U.S.C. 103(a) as defining subject which is allegedly unpatentable over Rubinsztajn (US Patent Publication No. 2003/0071368 A1) ("Rubinsztajn").

Applicants have amended the specification and claims, which were taken together with the verified translation of the Chinese priority Taiwanese Patent Application No. 09204467 and the Remarks herein are deemed to place the present application in condition for allowance. Favorable consideration is respectfully requested.

Amendments to the Specification and Claims

Paragraphs [0010], [0012], [0014] and [0018] of the specification have been amended to rectify errors incorporated into the English language specification during the translation from the Chinese language priority document.

Amended paragraphs [0010] and [0012] now disclose that the mixing ratio is "by weight" as indicated in the Chinese specification, at page 8, line 3, and as indicated in paragraphs [010] of the verified English language translation of the Chinese priority application.

Specifically, the following sequence of Chinese characters, 其中以重量計, describing the mixing ratio as being "by weight," was inadvertently omitted from the English language translation. Applicants are enclosing a verified translation of the Taiwanese priority document. Attention is directed to paragraph 10, wherein the mixing ratio is recited as being by weight. Accordingly, no new matter is introduced into the subject application by the foregoing amendments.

Paragraphs [0014] and [0018] were amended to delete the mistranslated terms with respect to promoters. The term "quaternary" or "quaternaries" has been corrected to the proper description as "quaternary ammonium salts." In addition, in the description of promoters in the same paragraph the term "imidazolates of 1,8-diazabicyclo[5,4,0]-undec-7-ene" was mistranslated and should have read, --imidazole compounds and salts of 1,8-diazabicyclo[5,4,0]-undec-7-ene.-- Again attention is directed to the verified translation of the Taiwanese application, paragraph 14, which clearly indicates that examples of promoters include quaternary ammonium salts, imidazole compounds and salts of 1,8-diazabicyclo[5,4,0]-undec-7-ene. Accordingly, Claims 1, 8, 12, 13 and 16 have been amended consistently herewith. In addition, Claim 1 has been amended to recite various epoxy resins. Support is found in paragraph 11 of

the instant specification. Accordingly, these amendments do not add new matter to the specification.

Rejection Under 35 U.S.C. § 112, Second Paragraph

The Examiner states that the recitation in Claims 1 and 12 "wherein the mixing ratio of said epoxy resin to said curing agent is in the range of from 0.7 to 1.1" is indefinite alleging that it is unclear as to what units are ascribed to the mixing ratio (e.g. weight ratio, volume ratio, mole ratio, etc.) refer. In addition, Claims 2-8 and Claims 13-16 are rejected because they directly or indirectly depend on alleged indefinite Claims 1 and 12, respectively.

As indicated herein above, the priority Taiwanese application indicated that the ratio is by weight. The proper reference in the Chinese language application and its location therein may be found on page 8, line 3 of the Taiwanese priority application and is represented by the following sequence of Chinese characters: 其中以重量計. This is also described as being by weight in the verified English translation of the priority application (see paragraph 20). Applicants have amended Claims 1 and 2 to recite the term "mixing ratio" is by weight.

Accordingly, Applicants respectfully submit that the rejection for alleged indefiniteness of the claims has been traversed by amendment.

Withdrawal of the rejection under 35 U.S.C. § 112, second paragraph is respectfully requested.

Rejections Under 35 U.S.C. § 102

Claims 1-8 and 12-16 are rejected under 35 U.S.C. 102(b) as allegedly anticipated by Ichiroku (US 2002/0022681 A1) ("Ichiroku").

In an embodiment described in Claim 1 et seq., the present application is directed to a material composition for packaging consisting essentially of (a) an epoxy resin selected from the group consisting of bisphenol A epoxy resin, bisphenol F epoxy resin, an aliphatic epoxy resin, and a cycloaliphatic epoxy resin, and a mixture thereof, and (b) a curing agent selected from acid anhydrides, and (c) a promoter, wherein the mixing ratio by weight of said epoxy resin to said curing agent is in the range of from 0.7 to 1.1. In another embodiment, as recited in Claim 12 et seq., the present invention is directed a material composition for packaging an image sensor consisting essentially of (a) an epoxy resin selected from the group consisting of an aliphatic epoxy resin, and a cycloaliphatic epoxy resin, and a mixture thereof, (b) a curing agent selected from acid anhydrides and (c) a promoter, wherein the mixing ratio by weight of said epoxy resin to said curing agent is in the range of from 0.7 to 1.1.

It should be noted that as claimed, the present invention uses the transitional phrase "consisting essentially of", i.e., a partially open claim. PPG Industries Inc. v. Guardian Industries Corp., 156 F.3d 1351, 48 USPQ2d 1351 (Fed. Cir. 1998).

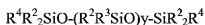
...By using the term "consisting essentially of", the drafter signals that the invention necessarily includes the listed ingredients and is open to unlisted ingredients that do not materially affect the basic and novel properties of the invention.

Id., at 1356, 48 USPQ2d at 1353-54.

Ichiroku teaches a composition comprising an epoxy resin and a curing agent in ratios of from 0.5 to 2.0, and preferably from 0.77 to about 1.2. Moreover, Ichiroku allegedly teaches that the epoxy resin is selected from the group consisting of bisphenol A epoxy resin, bisphenol F epoxy resin, novolac type epoxy resins, triphenolalkane type epoxy resins such as triphenolmethane type epoxy resins and triphenolpropane type epoxy resins; phenolalkyl type

epoxy resins, biphenylaralkyl type epoxy resins, stilbene type epoxy resins, naphthalene type epoxy resins, biphenyl type epoxy resins, and cyclopentadiene type epoxy resins. It also discloses that the curing agent includes acid anhydrides wherein the acid anhydride includes hexahydrophthalic anhydride, and methyl hexahydrophthalic anhydride. The promoter is selected from imidazole derivatives, tertiary amine compounds and organic phosphorous compounds which may be blended. The promoter is taught to include salts or quaternary compounds, imidazoles or 1,8- diazabicyclo[5,4,0] -undec-7-ene, or a mixture thereof.

However, Ichiroku also teaches that the epoxy resin composition also includes a foam suppressing composition comprising an oil compound consisting of a hydrophobic organopolysiloxane of general formula $I R^1_a SiO_{(4-a)/2}$ wherein R^1 is at least one group selected from hydroxyl groups and substituted or unsubstituted monovalent hydrocarbon groups of 1 to 18 carbon atoms, and "a" is a number of 1.9 to 2.2 having a viscosity of 10 to 500,000 centistokes at 25°C., and 0.1 to 20 parts by weight of finely divided silica having a BET specific surface area of at least 100 m²/g, and a hydrophilic polyoxyalkylene-modified silicone oil of the following formula



wherein R^2 which may be the same or different is a substituted or unsubstituted monovalent hydrocarbon group of 1 to 18 carbon atoms, R^3 is a group of the formula $-R^5 O(R^6 O)_b(R^7 O)_c-R^8$ wherein R^5 is a divalent C₁-C₄ hydrocarbon group, R^6 is ethylene, R^7 is propylene, R^8 is hydrogen or a monovalent organic group selected from the class consisting of C₁-C₆ alkyl, acetyl and isocyanate groups, b is an integer of 3 to 100, c is an integer of 0 to 100, R^4 is as defined for R^2 or R^3 , x is an integer of 5 to 100, and y is an integer of 1 to 10, having a cloud point in 1% aqueous solution of at least 40°C. and a viscosity of 10 to 100,00 centistokes at 25°C and

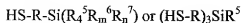
optionally a polyoxyalkylene polymer having a molecular weight of 500 to 5,000. Thus, Ichiroku requires components, the epoxy resin, the curing agent, a silicon stress-reducing agent, the hydrophobic organopolysiloxane and a hydrophilic polyoxyalkylene-modified silicone oil and silica.

It is to be noted that these additional components, viz., hydrophobic organopolysiloxane silicon, and hydrophilic polyoxyalkylene modified silicone oil are essential components of Ichioroku and distinguishes the composition described therein from other epoxy resin compositions. Thus, Ichiroku requires these additional foam suppressing components. It does not describe or teach a material composition without such component which provides the advantages of a high glass transition temperature, low refractive index, high light transmission and scratch resistance, as in the present invention. The foam suppressing composition is thereby excluded from the composition of the present invention by the use of the term "consisting essentially of", as the addition of the hydrophobic organopolysiloxane silicon and hydrophilic polyoxyalkylene modified silicone oil of Ichioroku in the present composition affects the novel and basic characteristics of the composition of the present invention. Therefore, the rejection of Claims 1-8 and 12-16 under 35 U.S.C. §102(b) is obviated; withdrawal thereof is respectfully requested.

Claims 1-8, 12-16 are rejected under 35 U.S.C. 102(b) as allegedly anticipated by Wada (US 5,145,889) ("Wada"). Wada discloses a composition comprising 100 parts epoxy resin and 70-140 curing agent, which according to Office Action, provides a ratio of epoxy to curing agent of 0.114 to 1.428. The Office Action refers to Figure 4 alleging that it teaches a ratio of 0.7 to 1.3. Wada further discloses that the epoxy resin is selected from the group consisting of bisphenol type epoxy resin and cycloaliphatic epoxy resin (col. 3 lines 60-65).

Wada alleges that the curing agent is selected from acid anhydrides (col. 4 lines 5-15). Further, Wada alleges that the acid anhydride includes succinic anhydride, hexahydrophthalic anhydride, and methyl hexahydrophthalic anhydride (col. 4 lines 5-15). In particular, Wada discloses that the composition further comprises a promoter selected from and quaternary compounds and salts of 1,8-diazabicyclo[5,4,0]-undecene, and a mixture thereof (col. 4 lines 50-61, col. 14, line 1-5).

However, Wada contemplates compositions having at least five chemical components. In particular, the epoxy composition consists essentially of 100 parts by weight of an epoxy resin; 70 to 140 parts by weight of a curing agent, including an acid anhydride; 0.5 parts by weight of a curing accelerator including an onium or diazabicycloalkene salt; 0.1 to 5.0 parts by weight of a phosphorus triphosphite and 0.5 to 5.0 parts by weight of a silane coupling agent represented by one of the formulae:



wherein R represents an alkylene group, an alkyleneoxy group, a phenylene group, a phenyleneoxy group, a benzylidene group, or a benzylene group, each of R^5 , R^6 , and R^7 independently represents an alkyl group, an alkoxy group, a phenyl group, a phenoxy group, or a benzyl group; each of 1, m, and n independently represents an integer of 0 to 3, provided that $1 + m + n = 3$.

Wada disclose that this silane coupling agent and the phosphorous triphosphite are essential components of Wada and imparts properties that distinguishes it from other epoxy resin compositions. The presence of these additional ingredients in the present composition affects the basic and novel properties of the present composition and are thus the additional ingredients excluded from the present invention by the term "consisting essentially of", as Wada

does not teach or describe a packaging composition having a high glass transition temperature, low refractive index, high light transmission and scratch resistance without either one of these components. Thus, this rejection of Claims 1-8 and 12-16 under 35 U.S.C. §102(b) is obviated; withdrawal thereof is respectfully requested.

Claims 1-8, 12-16 are rejected under 35 U.S.C. 102(e) as allegedly being anticipated by two applications published by Sumita et al.; US 2002/0077421 (i.e., '421), and US 2002/0089071 (i.e., '071) ("Sumita").

Both the '421 and the '071 publications disclose a liquid epoxy resin, a curing agent, a curing accelerator and an inorganic filler as essential components. The '071 publication requires acrylic particles of core-shell structure formed from polymers or copolymers comprising an alkyl acrylate or alkyl methacrylate or both and it is this acrylic component which is the distinguishing feature. On the other hand, the '421 publication requires the presence of a curing agent comprising 5 to 75 parts by weight of a mixture of 3,4-dimethyl-6-(2-methyl-1-1-propenyl)-1,2,3,6, tetrahydrophthalic acid and 1-isopropyl-4-methyl bicyclo [2.2.2] oct-5-ene-2,3 dicarboxylic acid ("mixture") and the distinguishing feature of the composition described herein and thus is required. The presence of these acrylic components and the dicarboxylic acid and tetrahydrophthalic acid in the present composition affects the basic and novel properties of the present invention. Both the mixture of tetrahydrophthalic acid and the mixture of dicarboxylic acid and the acrylic particles are excluded from the present invention through the use of "consisting essentially of". Neither the '421 publication nor the '071 publication teach or disclose a packaging composition of the present invention which provides high glass transition temperatures, low retractive index, high light transmission and scratch resistance that does not contain the acrylic component or the mixture described

hereinabove. Thus, the rejections of claims 1-8, and 12 under 35 U.S.C. §102(e) by either the '071 or the '421 publications are obviated; withdrawal thereof is respectfully requested.

Rejection Under 35 U.S.C. § 103(a)

Claims 1-7, 12-15 are rejected under 35 U.S.C. 103(a) as allegedly unpatentable over Rubinsztajn (US 2003/0071368 A1) ("Rubinsztajn"). Rubinsztajn allegedly discloses a composition comprising an epoxy resin and a curing agent at least one boron containing catalyst that is essentially free of halogen and at curing modified.

The Office Action further alleges that Rubinsztajn indicates that the weight amount of epoxy resin and curing agent is a result effective variable by changing the weight percentage value of each component (See paragraph 0025-0026). The Examiner further concludes that although the ratios may differ from those in the claimed compositions, persons of ordinary skill in the art could determine these variables, i.e., weight ratios, by routine experiment.

However, it is noted that the amount of epoxy resin relative to anhydride curing agent, the boron containing catalyst and are modifier is present in greater than about 60% by weight based on the combined weight of these components. Paragraphs 25 and 26 do not specifically teach or disclose the weight ratio of the epoxy to curing agent. Except for the exemplification, no other portion of Rubinsztajn refer to any ratio of epoxy resin to anhydride. Moreover, the exemplification discloses a ratio of 73:17 (see, Examples 1 and 2), which is greater than 4:1, which is well outside the range recited in the claims. Rubinsztajn do not teach, disclose or suggest any ratio wherein the epoxy resin to anhydride curing agent is less than 4.1. On the other hand, as claimed, the ratio of epoxy resin to curing agent is 0.7 to 1.1. Thus,

Rubinsztajn teaches away from a composition having the present ratio. Therefore, Rubinsztajn does not teach, disclose or suggest the present invention.

In addition, unlike the present composition, Rubinsztajn requires the boron containing component. It does not teach, disclose or suggest a composition without such component.

On the other hand, the presence of the boron component in the present composition affects the basic and novel properties of the claimed composition. Rubinsztajn does not teach, disclose or suggest the present composition without the boron component which provides the advantages of a high glass transition temperature, low retractive index, high light transmission and scratch resistance as in the present invention.

Thus, for reasons provided it is respectfully submitted that the currently amended claims are patentably distinct over Rubinsztajn. Accordingly, withdrawal of the rejections under 35 U.S.C. § 103(a) is respectfully requested

CONCLUSION

In view of the foregoing amendments and remarks, it is firmly believed that the subject application is in condition for allowance, which action is earnestly solicited.

Respectfully submitted,



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Encl.: Verified Translation of the Taiwanese Priority Document